

REMARKS

I. Status of Claims

Claims 19, 21-33, 35-45 were pending.

Claim 45 has been canceled.

Claims 19-26, 29-31, and 33-36 are rejected under 35 USC 103(a) as being unpatentable over Chang et al. (US 7,359,345 B1) in view of 3GPP TS 25.321, version 5.6.0 (3GPP).

Claim 45 is rejected under 35 USC 101 for being directed towards non-statutory matter.

Accordingly, claims 19, 21-33, and 35-44 are now pending. Claim 19 has been amended.

II. Rejections under 35 U.S.C. § 101

Because Applicant has canceled claim 45, the rejection of claim 45 under 35 U.S.C. 101 is moot.

III. Rejections under 35 USC § 103

A. Claims 19, 21-26, 29-31, and 36-44

Amended claim 1 describes a method for transmitting data according to UMTS standard in which inband signaling of relevant for the base station is performed at the MAC layer level. For the signaling between the mobile terminal and a UMTS base station a signaling transport block is introduced. At least one signaling transport block is multiplexed within the transport blocks of a transport channel that are to be transmitted (this feature is based on claim 21 which has now been canceled).

The grouping of signaling information to signaling transport blocks and multiplexing them within the transport blocks transmitted via a transport channel allows the transmitter on the one hand to efficiently transmit the signaling information while allowing the receiver on the other hand to easily detect the signaling information with the transmitted data stream.

Chang fails to disclose the feature that “at least one signaling transport block is multiplexed within the transport blocks of a transport channel that are to be transmitted”.

The 3GPP document does not cure this deficiency of Chang since 3GPP also fails to disclose that “at least one signaling transport block is multiplexed within the transport blocks of a transport channel that are to be transmitted”.

Furthermore, neither Chang nor the 3GPP document suggests that an efficient transmission of signaling information for both the transmitter and the receiver may be achieved in the way as it is described by claim 19.

Because the combination of Chang and the 3GPP fails to teach or suggest the limitations of claim 19, Applicants submit that the combination cannot support a prima facie case of obviousness against claim 19. Because the Office Action fails to establish a prima facie case of obviousness in rejecting claim 19, the rejection under 35 U.S.C. § 103 should be withdrawn.

Claims 21-26, 29-31, and 36-44 ultimately depend on claim 19. Accordingly, the rejections of claims 21-26, 29-31, and 36-44 should also be withdrawn.

B. Claims 33 and 35

The Office Action appears to rely only on Chang with respect to claim 33 and on the combination of Chang and 3GPP with respect to claim 35. For the reasons given below, it is believed that claim 33 as previously presented is patentable over the cited prior art, whether it is Chang taken alone, or Chang in combination with 3GPP.

Claim 33 includes a plurality of RRC functionalities, disposed in the form of at least one control and/or data processing means, transferred from the radio network control entity RNC to the base station. Chang, outside of its discussion of the prior art, fails to discuss RRC functionalities or how such functionalities would be implemented in the context of Chang's disclosed method and systems.

The subject-matter of presently pending claim 33 supports an UTRAN protocol architecture with RRC functionality in the Base Station, so that radio resources can be managed closer to the air interface by inband signaling, but with higher layer functionalities. Consequently, reconfigurations of radio resources in the uplink and downlink can be carried out much more quickly and efficiently for a User Equipment. Hence, data transmission in the downlink and the uplink can be significantly improved in terms of transmission delay and data throughput.

In contrast thereto, according to Chang, the technique provided enables messaging between RLCs and/or MAC layers of Node B and UE, respectively, but is silent, outside of its discussion of the prior art, regarding RRC or other higher layer functions necessary for data transmission control. Chang would not disclose or suggest to person of ordinary skill in the art how to improve data transmission by allowing fast and efficient control of radio resources by implementing the control of radio resources on an RRC level in a Base Station.

For example, Chang discloses a packet communications system including a transmission apparatus and a reception apparatus, in which a signaling method between a MAC layer

entity of the transmission apparatus and a MAC layer entity of the reception apparatus is provided. *Chang* at col. 6, lines 25-30. A technique is provided in *Chang* for enabling a message exchange between MAC-hs layers of a Node B and a User Equipment UE *Chang* at col. 6, lines 8-9.

In order to avoid a long time delay elapsing during communication between RLC arranged in the RNC and RLC arranged in the UE, *Chang* provides generating and transmitting control message in a MAC h-s by an RLC, wherein the RLC of the reception side analyzes this control message and performs necessary operations according to the results of the analysis. *Chang* at col. 5, line 60 - col. 6, line 9.

Claim 33 differs, in that it provides a communication system, wherein a plurality of RRC functionalities are disposed in the form of at least one control and/or data processing means transferred from the radio network control entity RNC to the base station (BS).

Some of these functions are, for example, reconfiguration of physical channels in the uplink and downlink; reconfiguration of transport formats and transport format combinations in the uplink and downlink; switching of the transport channel type, i.e. from common transport channels to dedicated transport channels and vice versa; and setting of the uplink SIR_{target} for fast performance control of dedicated physical channels.

In other words, according to presently pending claim 33, functions of RRC, which is part of the UMTS protocol stack and handles the control plane signaling of layer 3 between the UE and the UTRAN, are transferred to the Base Station. This means that, according to presently pending claim 33, functionalities of layer 3, namely functionalities of the Radio Resource Control layer, which conventionally belongs to the core network, and thus functionalities of a level above layer 2, are transferred to the Base Station.

In contrast, RLC- and MAC-hs-entities are implemented in layer 2. *Chang* discloses transmitting control message in a MAC h-s by an RLC and is silent as to utilizing RRC functionalities in the context of *Chang*'s disclosed method and systems. That is, *Chang*

does not disclose RRC functionality in a Base Station. Thus, Chang fails to disclose or suggest a plurality of RRC functionalities, disposed in the form of at least one control and/or data processing means, transferred from the radio network control entity RNC to the base station (BS), as required by claim 33.

Applicant submits that Chang, alone or in combination with 3GPP, cannot support a rejection of claim 33 under 35 USC § 103. Accordingly, Applicant requests that its rejection be withdrawn.

Claim 35 depends from claim 33, and is therefore patentable over Chang, alone or in combination with 3GPP, for at least the same reasons.

IV. Conclusion

In view of the foregoing remarks, Applicant respectfully requests reconsideration of this application and allowance of the pending claims. Because there are no longer any amendments to the claims, Applicant respectfully requests that the arguments submitted herewith be considered.

Dated: June 2, 2010

Respectfully Submitted,

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